

GILA RIVER BASIN

09486500 SANTA CRUZ RIVER AT CORTARO, AZ

LOCATION--Lat 32° 21'04", long 111° 05'38", in NW^{1/4}NW^{1/4}NW^{1/4} sec. 35, T.12 S., R.12 E., Pima County, Hydrologic Unit 15050302, at center column of bridge pier on left bank, 0.5 mi southwest of Cortaro, 1 mi downstream from Ina Road treatment plant, 2.6 mi downstream from Canada del Oro, and 3.7 mi downstream from Rillito Creek.

DRAINAGE AREA--3,503 mi², of which 395 mi² is in Mexico.

PERIOD OF RECORD--Oct. 1939 to June 1947 (published as "at Rillito"), July 1950 to Sept. 1984, Mar. to June 1990, July to Sept. 1990 (fragmentary record), Oct. 1990 to current year.

REVISED RECORDS--WSP 1283: Drainage area.

GAGE--Water-stage recorder. Datum of gage is 2,100.00 ft, above sea level. Prior to June 30, 1947, at site 5.5 mi downstream at different datum. July 8, 1950, to Jan. 20, 1966, at present site at datum 19.11 ft lower. Jan. 20, 1966, to Sept. 30, 1984, at present site and datum 23.11 ft lower. Aug. 1 to Oct. 19, 1990, at site on right bank 0.33 mi. downstream from bridge at datum 30.20 ft lower. Apr. 10 to May 17, 1991, at site on bridge, 200 ft toward right bank, at different datum. Supplementary water-stage recorder on downstream site on left bridge pier at datum 19.11 ft lower Aug. 29, 1969, to Sept. 30, 1984. Temporary water-stage recorder on right bank Oct. 27, 1983, to Sept. 30, 1984, at datum 20.80 ft lower. Prior to May 8 at site 300 ft upstream at different datum.

REMARKS--Records fair, except for estimated daily discharges, which are poor. Many diversions above station, mostly by pumping from ground water, for irrigation of about 34,000 acres. Waste water from irrigation and from sewage-disposal plants is included in flow past station in water years 1951, 1952, 1970-82, 1990-97.

EXTREMES FOR PERIOD OF RECORD--Maximum discharge, 65,000 ft³/s Oct. 2, 1983, gage height 16.57 ft from floodmark, computed by flood-routing method from Santa Cruz River at Tucson and Rillito Creek at Tucson; no natural flow for most of each year. (See REMARKS)

EXTREMES FOR CURRENT YEAR--Peak discharges greater than base discharge of 2,700 ft³/s and (or) maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Aug. 5.....	2115	*8,340	*10.41
Sept. 7.....	0045	4,450	8.62
Sept. 10.....	2015	3,710	8.19

Minimum daily discharge, no natural flow for most of year.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	59	62	64	76	72	74	66	63	63	67	69	60
2	67	65	64	76	67	74	66	68	61	66	73	61
3	66	60	65	74	73	75	67	70	63	64	233	68
4	65	59	65	78	69	76	68	70	62	64	67	65
5	55	61	65	74	72	77	67	68	61	64	706	67
6	55	63	70	78	69	77	65	70	64	58	345	207
7	54	65	72	79	70	79	68	64	63	60	133	735
8	59	67	67	80	73	82	69	56	62	63	59	e74
9	57	66	69	80	72	80	67	63	62	64	56	e104
10	52	64	70	77	71	77	65	75	63	64	54	e1320
11	51	65	75	79	68	76	64	75	62	68	54	506
12	53	68	74	77	64	72	68	66	62	65	54	73
13	51	64	77	76	66	69	66	63	63	66	55	66
14	52	59	77	76	63	70	65	62	65	77	50	62
15	57	65	72	73	68	74	64	61	63	178	59	54
16	55	62	71	75	72	73	62	62	63	61	64	53
17	55	64	73	74	70	73	63	63	65	63	52	55
18	58	67	71	78	73	71	62	64	64	64	54	49
19	58	69	67	77	73	74	64	63	64	70	55	51
20	56	67	68	77	71	73	61	63	66	67	53	57
21	62	68	70	78	69	74	61	63	65	70	48	53
22	67	68	68	76	69	71	65	61	67	73	52	52
23	63	63	73	69	73	69	63	61	66	124	e56	52
24	63	65	74	71	65	70	64	64	67	79	47	49
25	65	66	63	73	70	69	64	62	66	77	53	51
26	63	68	64	69	69	65	63	56	66	86	56	50
27	61	67	72	67	68	67	65	57	66	290	58	55
28	61	69	77	69	71	72	67	61	65	61	111	52
29	62	62	73	67	---	68	68	62	62	61	132	59
30	57	63	72	69	---	68	62	62	56	64	77	57
31	60	---	77	68	---	69	---	64	---	64	61	---
TOTAL	1819	1941	2179	2310	1950	2258	1949	1982	1907	2462	3096	4317
MEAN	58.68	64.70	70.29	74.52	69.64	72.84	64.97	63.94	63.57	79.42	99.87	143.9
MAX	67	69	77	80	73	82	69	75	67	290	706	1320
MIN	51	59	63	67	63	65	61	56	56	58	47	49
AC-FT	3610	3850	4320	4580	3870	4480	3870	3930	3780	4880	6140	8560
CFSM	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.03	0.04

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1940 - 2002, BY WATER YEAR (WY)

	MEAN	30.40	81.89	99.76	48.13	40.44	20.55	19.27	20.70	75.49	115.9	59.03
MAX	744	228	1044	2485	252	496	104	65.8	84.9	393	868	358
(WY)	1978	2001	1979	1993	1995	1978	1998	1999	2000	1954	1955	1964
MIN	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.69	1.97	0.000
(WY)	1940	1943	1943	1943	1943	1940	1940	1940	1941	1960	1962	1953

SUMMARY STATISTICS

	FOR 2001 CALENDAR YEAR	FOR 2002 WATER YEAR	WATER YEARS 1940 - 2002
ANNUAL TOTAL	22802	28170	
ANNUAL MEAN	62.47	77.18	55.81
HIGHEST ANNUAL MEAN			262
LOWEST ANNUAL MEAN			2.59
HIGHEST DAILY MEAN	249	1320	40000
LOWEST DAILY MEAN	30	47	0.00
ANNUAL SEVEN-DAY MINIMUM	47	52	0.00
ANNUAL RUNOFF (AC-FT)	45230	55880	40430
ANNUAL RUNOFF (CFSM)	0.018	0.022	0.016
10 PERCENT EXCEEDS	72	77	69
50 PERCENT EXCEEDS	60	66	13
90 PERCENT EXCEEDS	53	56	0.00

e Estimated